

PALOMAR COLLEGE
COURSE OUTLINE OF RECORD FOR
DEGREE CREDIT COURSE

 X Transfer course X A.A. degree applicable course

(check all that apply)

COURSE NUMBER AND TITLE: AP SM 105 - Sheet Metal Welding

UNIT VALUE: 3

MINIMUM NUMBER OF SEMESTER HOURS: 96

BASIC SKILLS REQUIREMENTS:

Appropriate language and computational skills.

ENTRANCE REQUIREMENTS:

PREREQUISITE: Apprenticeship Sheet Metal 104.

COREQUISITE: None.

RECOMMENDED PREPARATION: None.

SCOPE OF COURSE:

Basic methods of gas and arc welding for apprentices in sheet metal. Includes introduction to codes, standards, welding theory and trade requirements, as well as practical experiences with welding equipment.

SPECIFIC COURSE OBJECTIVES:

The student will be able to:

1. Understand and apply local, state and federal safety rules and regulations to specific job sites.
2. Recite the advantages of pursuing a career as a skilled craftsman in the sheet metal trade.
3. Explain trade terms, use of tools and materials and the fundamental processes of sheet metal work.
4. Apply the basic principles of layout, construction, fabrication and maintenance as related to the sheet metal industry.

CONTENT IN TERMS OF SPECIFIC BODY OF KNOWLEDGE:

- I. Introduction and safety
 - A. Introduction and safety
 - B. Safety
 - C. Special problems when welding sheet metal
- II. Oxy-fuel welding
 - A. Oxygen, fuel gases, materials and equipment
 - B. Oxygen-fuel gas welding, brazing and cutting
 - C. Oxyacetylene cutting equipment
- III. Power Sources
 - A. Electrical Power Fundamentals
 - B. Welding power sources and controls
- IV. SMAW (Shielded Metal Arc Welding)
 - A. Equipment
 - B. Welding process
- V. GTAW
 - A. Gas tungsten arc welding
 - B. Materials and applications
 - C. GTAW of carbon steel, stainless steel, aluminum and copper
- VI. GMAW (Gas Metal Arch Welding)
 - A. Types of metal transfer
 - B. Shielding gases and electrodes
 - C. Power sources and controls
 - D. Procedures, techniques and use

REQUIRED READING:

Meyer, Leo. Sheet Metal Apprentice Welding Book I, 2nd Edition.
Alexandria, Virginia: Sheet Metal Industry National Training
Fund, 1990.

SUGGESTED READING:

Sheet Metal Workers Journal.

Snips Magazine.

REQUIRED WRITING:

The student shall complete a set of plans suitable for the manufacture of a project. A list of materials and all specifications shall accompany the plan. Minimum of two pages for each set of plans.

OUTSIDE ASSIGNMENTS:

Students are expected to spend a minimum of three hours per unit per week in class and on outside assignments, prorated for short-term classes.

Reading assigned text, handouts, and other suggested materials. All welding will be completed in school lab under instructor supervision.

INSTRUCTIONAL METHODOLOGY:

Check all that apply:

- lecture
- laboratory
- lecture-laboratory combination
- directed study

This course may be offered as a distance education course and meets Title 5 regulations 55370, 55372, 55374, 55376, 55378, and 55380.

Yes No

If yes, check all that apply. (See guidelines for preparation for definitions.)

- telecourse
- mediated instruction
- computer assisted instruction

GRADING POLICY AND STANDARDS (include methods of determining whether the stated objectives have been met by students):

20%	Quizzes	A = 100 - 90
20%	Mid-term	B = 89 - 80
20%	Final	C = 79 - 70
40%	Projects	F = below 70

IS COURSE REPEATABLE FOR REASON(S) OTHER THAN DEFICIENT GRADE?

Yes No Number of times course may be taken for credit: 2.

If yes, identify specific provision of Title 5 Division 2 section(s) 55761-55763 and 58161 which qualifies course as repeatable: 58161-1-C

CONTACT PERSON: Director, Vocational Programs, Ext. 2286